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Spring 2007

Review of *The Biology of Freshwater Wetlands: Biology of Habitats* by Arnold G. van der Valko

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Euliss, Jr., Ned H., "Review of *The Biology of Freshwater Wetlands: Biology of Habitats* by Arnold G. van der Valko" (2007). *Great Plains Research: A Journal of Natural and Social Sciences*. 885.
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Soils in Archaeological Research. By Vance T. Holliday. New York: Oxford University Press, 2004. xiv + 448 pp. Figures tables, appendixes, references, index. \$144.50 cloth.

When I teach geoarchaeology, I tell students on the first day of class that “soils are the canvas for much of the archaeological record.” Just as an artist’s canvas holds and affects the paint, soils hold archaeological materials, and soil-forming processes strongly influence the preservation and spatial pattern of cultural deposits. Given this close relationship between soils and the material remains of humans, we have long needed a treatise that addresses *all* aspects of soils from an archaeological perspective. Vance Holliday’s latest book, *Soils in Archaeological Research*, does this and more.

The author has devoted much of his career to the application of soil science, especially pedology and soil geomorphology, in archaeology. Most of his research experience has been in the Southern Plains, and he has collaborated with many Plains archaeologists and geoarchaeologists. Although Holliday takes a global approach in this book, his roots in the Great Plains are apparent: many concepts are explained with examples from the midcontinent.

Holliday begins with a description of what is and is not soil, including definitions of soil horizons used in the U.S., and tracks the history of soil science applications in archaeology as a component of geoarchaeology (chapter 1). Next, he describes soil terminology and reviews methods for analyzing soils in the field and laboratory (chapter 2). After presenting several views and models of soil development and their significance in geoarchaeological research (chapter 3), the author considers the utility of USDA county soil surveys in archaeological investigations (chapter 4). This is followed by a detailed review of soils as stratigraphic markers (chapter 5) and an assessment of soil stratigraphy in various geoarchaeological contexts, including alluvial, eolian, and volcanic environments (chapter 6).

Holliday goes on to address the archaeological implications of soils as indicators of landscape stability and the age of landscapes (chapter 7) and to consider the utility of soils in paleoenvironmental reconstructions (chapter 8). Soils are also shown to be important in reconstructing the evolution of landscapes and, consequently, the evolution of archaeological sites (chapter 9). This leads to a review of soil-forming processes and their effects on the preservation and spatial pattern of archaeological materials (chapter 10). Holliday

also addresses human impacts on soils, with lengthy sections devoted to anthrosols (soils made or strongly affected by humans) and agriculture (chapter 11). The appendixes include a description of variations on USDA soil horizon nomenclature (appendix 1), an overview of soil phosphorous chemistry and how it can be used in geoarchaeological investigations (appendix 2), and a discussion (coauthored with Julie K. Stein and William G. Gartner) on the variability of soil laboratory procedures and results (appendix 3).

Although a tremendous amount of information is presented in *Soils in Archaeological Research*, Holliday is careful not to drift from the book’s main theme: the application of soil science in archaeology. Each chapter includes a discussion of basic principles, their archaeological implications, and case studies.

Soils in Archaeological Research is well written, includes many good diagrams and photographs, and offers an impressive list of references. My only criticism is its exorbitant price. That aside, the volume is a valuable resource for geoscientists working in archaeology and for archaeologists wishing to gain a better understanding of the “canvas” that holds and shapes the archaeological record. **Rolfe D. Mandel**, *Kansas Geological Survey, University of Kansas*.

The Biology of Freshwater Wetlands: Biology of Habitats. By Arnold G. van der Valk. Oxford: Oxford University Press, 2006. xi + 173 pp. Figures, tables, glossary, bibliography, index. \$99.50 cloth, \$44.50 paper.

Wetland ecology is a relatively new field that developed from an initial interest in a few direct benefits that wetlands provide to society. Consequently, much early scientific work was stimulated by economic returns from specific wetland services, such as production of peat and provision of habitat for economically valuable wildlife (e.g., waterfowl and furbearers). Over time, societal interest in wetlands broadened, and these unique habitats are now valued for many additional services, including some that bear nonmarket value. Common examples include carbon sequestration, flood reduction, water purification, and aesthetics. The increased recognition of the importance of wetlands has generated a diversity of job opportunities in wetland ecology and management. Despite the increased knowledge base and enhanced job market, I am not aware of any institutions that offer specialty degrees in this new discipline. Indeed, relatively few institutions offer specific wetland ecology classes,

with Arnold G. van der Valk and a few of his peers at other universities being notable exceptions.

The author designed this book as an introductory text in wetland ecology based on a beginning course he teaches at Iowa State University. Although the title suggests a strong focus on biology, the volume's scope is much broader and provides an excellent background for many student interests, including wetland function and ecological processes. The text covers many disciplines involved in wetland ecology, despite the uneven availability of information on specific topics within disciplines. This results in each section providing the needed overview about our state of knowledge without getting highly technical, as specialty or advanced classes require. Hence, students who plan a career in wetlands will need to supplement the information offered here with additional readings and study.

The Biology of Freshwater Wetlands covers the pertinent topics, is easy to follow, and will be of value to students just beginning their study of wetlands. While the author cites the most pertinent literature, the addition of recommended readings at the end of chapters would have been helpful in guiding students as they develop specific interests. The summary at the end of each chapter is useful, and the suggested experiments and observations ought to stimulate students to think more deeply and pursue additional knowledge. The volume is an excellent source of information about freshwater wetlands, providing wide coverage of wetlands around the world. Students of wetland ecology and management will find it of enormous value. **Ned H. Euliss, Jr.**, *Northern Prairie Wildlife Research Center, U.S. Geological Survey.*

Watchable Birds of the Black Hills, Badlands and Northern Great Plains. By Jan L. Wassink. Missoula, MT: Mountain Press Publishing, 2006. vii + 231 pp. Map, photographs, glossary, references, species index. \$22.00 paper.

In the sometimes odd vernacular of bird watchers, "watchable" refers to those species that for the most part are fairly easily observed and, by virtue of their behavior or other features, are deemed especially interesting. Of the roughly 400 bird species that occupy the region selected by Wassink (including all of both Dakotas and Nebraska, plus the High Plains of eastern Montana, Wyoming, and northeastern Colorado), he has chosen 84 to

discuss individually. One or more generally high-quality color photos of each of these species are included. He has also included color photos of 71 "similar" species, usually of forms closely related to the 84 primary ones. Up to about 500 words of text are provided for each of these, usually emphasizing breeding behavior and nesting biology. The "similar species" receive short paragraphs of about 100 words. For all species there is an abbreviated "Field Marks" section and a short "Status" statement. Some relatively rare species also have a "Hot Spots" section, indicating locations where each is more likely to be encountered.

In addition to this primary text and photo section, there is a glossary of nearly 60 bird-related terms, plus references to 24 books, four CDs of bird songs, and five periodicals related to birds and birding. Sixteen bird-related Web sites are also listed, without descriptive comments. Lastly, there are names and addresses of 61 recommended birding destinations (19 in Montana, 16 in Nebraska, 14 in North Dakota, 10 in South Dakota, and two in Wyoming). These addresses include phone numbers and, in a few cases, Web site URLs, but provide no further information such as available check lists or reported numbers of species for that site.

This book is clearly directed toward persons without much field experience. The relatively few species included make it of very limited use as a field guide, and the lack of range maps or site maps further limits its general utility. Although a good deal of the text describes species-typical breeding behaviors, no primary literature citations are offered for persons wanting to verify or further investigate these comments. The text is fairly up-to-date, having the most recent American Ornithologists' Union sequence of species and, for example, 2005 population data on the whooping crane.

All told, the book could have easily been made much more useful by providing a better-documented text and associated literature section and specific information on each of the selected birding destinations, such as their locations, unique habitats, and bird "specialties." References on the avifaunas of each of the included states would have been useful too, inasmuch as most of them have recent state "bird books," breeding bird atlases, or at least general distributional surveys. I would not recommend this volume to advanced birders, but the text would be moderately informative for general readers. **Paul A. Johnsgard**, *School of Biological Sciences, University of Nebraska-Lincoln.*